E2 Cont'd

g/cm^3 together make up at least 70 percent of the total weight of the first film, and wherein the patch is adhered to the bag with an adhesive or corona treatment.---

REMARKS

I. The Pending Claims and the Amendments to the Claims

Claims 1 and 3-25 remain pending. Claim 2 stands canceled. Claim 1 is the only pending independent claim. Claim 3 is amended to recite the ethylene/alpha-olefin copolymer having a density of greater than 0.915 as being present in an amount of from 5 to 70 weight percent, rather than from 5 to 95 weight percent. This amendment is required in order to be consistent with the recitation of the other copolymer as being present at the 30 to 95% level. That is, 70% is the maximum possible content for the higher density copolymer if the lower density copolymer is present at a level of at least 30%. Support for the amendment can be found at, for example, Page 3 lines 1-11 of Applicants' specification. No new matter is included in the amendment.

II. The §112 Rejection of Claims 1 and 3-25

In Paragraph 6 of the 29 January Office Action, Claims 1 and 3-25 are rejected under 35 USC 112, second paragraph, as indefinite. More particularly, Paragraph 6 refers back to the previous office action and sets forth a response to Applicants' previous arguments in Paragraph 9. More particularly, Paragraph 9 states that Applicants have failed to point out any differences in structure between homogeneous and heterogeneous ethylene/alpha-olefin copolymers, and that the

composition distribution breadth index should be sued to clearly define independent Claim 1 and dependent Claim 9.

In response, Applicants contend that Claims 1 and 3-25 are not indefinite. Applicants again direct attention to the remarks set forth on Pages 2-4 of Applicants' amendment mailed November 1, 2002. More particularly, Applicants note that in fact these remarks do refer to *structural* differences between homogeneous and heterogeneous ethylene/alpha-olefin copolymers. Differences such as molecular weight distribution and comonomer mer distribution set forth in these remarks are indeed of a structural nature. Molecular weight distribution is a structural difference because it pertains to the relative lengths of the polymer chains. Comonomer mer distribution is a structural difference because it pertains to the amount and proximity of comonomer mer units in the polymer chain. Both of these differences are physical differences in the structure of the polymer chains of heterogeneous copolymers versus homogeneous copolymers.

Moreover, Applicants contend that it is well-established that a patentee can be his/her own lexicographer, and in this manner describe the invention in any desired terms as defined in the specification. MPEP § 2173.05(a). Applicants have done this. The phrases "heterogeneous ethylene/alpha-olefin copolymer" and "homogeneous ethylene/alpha-olefin copolymer"" are clearly described at page 8-12 of Applicants' specification.

Although the descriptions of heterogeneous and homogeneous ethylene/alpha-olefin copolymers also include details concerning the process by which the respective ethylene/alpha-olefin copolymers are made (e.g., the type of catalysts which may be used), the phrases "heterogeneous ethylene/alpha-olefin copolymer" and "homogeneous ethylene/alpha-olefin copolymer" are clearly and unmistakably described with respect to the structure of the respective

copolymers. Thus, one of ordinary skill in the art would not be confused as to whether these phrases refer to the polymerization systems or to the structure of the molecules themselves, as explained above.

Applicants further contend that the terms "heterogeneous copolymer" and "homogeneous copolymer," particularly "heterogeneous ethylene/alpha-olefin copolymer" and "homogeneous ethylene/alpha-olefin copolymer," are well-understood and are well-defined as terms of art, dating back at least as far as February of 1972 (the issue date of U.S. Pat. No. 3,645,992, to Elston). As proof of this assertion, Applicant is submitting herewith a Supplemental Information Disclosure Statement which cites and provides copies of a number of publications which use and define these terms similarly to the way in which they are used and defined in Applicant's specification. Elston, for example, provides a discussion of the differences between heterogeneous and homogeneous ethylene/alpha-olefin copolymers at col. 1, line 45 through line 2, line 61. As stated therein:

> "In the art, it is well known that within any given copolymer molecule, the comonomer distribution may be random, regular, block or combinations thereof.
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> :
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> :
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> However, the comonomer distribution between the molecules of the copolymer must also be considered. Upon consideration of the latter distribution factor, two classes of copolymers have been noted, namely heterogeneous copolymers and homogeneous copolymers.
>
> Heterogeneous copolymers may be defined as those in which the copolymer molecules do not have the same ethylene/comonomer ratio.
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> The preferred ethylene--olefin copolymers belong to the class designated as homogeneous. Homogeneous copolymers may be defined as those in which not only is the comonomer randomly distributed within a given molecule but all the copolymer molecules have the same ethylene/comonomer ratio." [Emphasis Added]

Mathot et al. provide that

> "[a] possible cause of the non-uniformity in crystallization behaviour might be a heterogeneous distribution of comonomer elements (4, 5, 6), Fig. 2, leading to a multi-peak ethylene sequence length distribution. In contrast, homogeneous copolymers (7, 8, 9), Fig. 2, produce a single-peak DSC curve, Fig. 1, the shape of which is dependent on the ethylene sequence length distribution." V.B.F. Mathot et al., HETEROGENEITY OF LINEAR LOW DENSITY POLYETHYLENE AS STUDIED BY FRACTIONAL AND DSC, Morphology of Polymers, pgs. 363-70 (1986).

A particularly illustrative publication is B.C. Childress, PROPERTIES OF HOMOGENEOUS AND HETEROGENEOUS POLYOLEFINS: METALLOCENE CATALYZED VERSUS ZIEGLER-NATTA CATALYZED RESINS, Proceedings of the 1994 Worldwide Metallocene Conference (1994). This publication describes both heterogeneous and homogeneous ethylene/alpha-olefin copolymers, as well as many of the differences therebetween.

Other publications are also cited. In view of the foregoing, it is submitted that the meaning of homogeneous and heterogeneous ethylene/alpha-olefin copolymers are well-established in the art. Furthermore, such terms are clearly defined in the specification. For these reasons, it is respectfully requested that the rejection be withdrawn.

III. The Rejection of Claims 1, 3-8, 10-11, and 13-25 as Obvious over FERGUSON '403 in view of FERGUSON et al '856

In Paragraph 7 of the 29 January Office Action, Claims 1, 3-8, 10-11, and 13-25 remain rejected under 35 USC 103(a) as unpatentable over FERGUSON '403 in view of U.S. Patent No. FERGUSON et al '856. The 29 January Office Action relies upon FERGUSON '403 and FERGUSON et al '856 as set forth in Paragraph 11 of Paper #13, mailed 5 June 2002. Paragraph 10 of the 29 January Office Action responds to Applicants' arguments with the following points:

a) FERGUSON '403 is the primary reference which teaches the patch film, and FERGUSON et al '856 is the secondary reference which teaches unexpected results in that VLDPE produces improved O_2-barrier properties and also lower shrink temperature properties,

b) FERGUSON et al '856 further teaches a blend of VLDPE and LLDPE in one layer, indicating that FERGUSON et al '856 recognizes the advantages of the blend, i.e., that VLDPE can be oriented out of hot water at a temperature 40°C below its melting point, whereas LLDPE has difficulty, and that as a result combining FERGUSON et al '856 with FERGUSON '403 produces an improvement over FERGUSON '403.

In response, Applicants continue to maintain that Claims 1 and 3-25 are patentable over FERGUSON '403 in view of FERGUSON et al '856. Applicants acknowledge that FERGUSON et al '856 discloses a heat-shrinkable film having improved shrink, tear, barrier, and puncture-resistance, and that FERGUSON et al '856 further discloses a film having a blend of VLDPE and LLDPE. However, Applicants continue to maintain that, for several reasons, the disclosure of increased shrink, tear, barrier, and puncture-resistance disclosed in FERGUSON et al '856 does not provide adequate motivation to decrease the LLDPE content of the patch film of FERGUSON '403. First, FERGUSON '403 is directed particularly to a patch film for a patch bag, while FERGUSON et al '856 is directed to a film for a bag, not a film for a patch. FERGUSON et al '856 does not provide adequate motivation to substitute a blend of VLDPE and LLDPE for the LLDPE in the patch film of FERGUSON '403, because FERGUSON '403 discloses LLDPE as surprisingly providing the patch with increased strength and toughness. FERGUSON et al '856 does not provide any teaching that a blend of VLDPE and LLDPE in a layer of a patch film would be superior to the quantity of LLDPE which is equivalent to the sum of the VLDPE and LLDPE. As such, one of ordinary skill in the art

would not have been motivated to substitute any VLDPE for the LLDPE of FERGUSON '403. That the VLDPE lowers the shrink temperature would not be enough motivation, as lowering the shrink temperature is not the prime consideration for a patch film...rather, increased strength and toughness (as taught by FERGUSON '403) is the prime consideration for one of skill in the art to make a modification to the LLDPE content of the patch film of FERGUSON '403. The Office Action has not adequately established why FERGUSON et al '856 provides a reason to substitute a blend of VLDPE and LLDPE for the LLDPE in the patch film of FERGUSON '403. No prima facie case of obviousness has been made out because improved shrink is not needed for the patch film of FERGUSON '403.

Second, Applicants point out that those of skill in the art would have recognized a reason for NOT substituting VLDPE for some or all of the LLDPE in the patch film of FERGUSON '403. The reason is that as the density of an ethylene/alpha-olefin copolymer increases, the abrasion-resistance of the film increases, and as the density of the ethylene/alpha-olefin copolymer decreases, the abrasion-resistance decreases. See Exhibit A (i.e., Roman, A., "Density of Polyethylene", Union Carbide Brazil, 1981 {translation}] and Exhibit B (i.e., Langohr, M.F. and Shah, B.A., "LLDPE Extrusion Coating Resins: Effect of Molecular Design on Performance Properties", Tappi Proceedings, Book 2, Tappi Press 1989).

Those of skill in the art recognize that the density of VLDPE is lower than the density of LLDPE. As an example, FERGUSON et al '856 states that LLDPE has a density of from about 0.915 to 0.925 (see FERGUSON et al '856 at Column 5 lines 39-41), while also stating that VLDPE has a density of less than 0.910 down to as low as 0.860 or even lower (see FERGUSON et al '856 Col. 5 lines 63-65). Table 1 of Exhibit A states that in a film, as the density of polyethylene

increases, the resistance to abrasion increases. Therefore, the converse must also be true, i.e., that as the density of the polyethylene decreases, such as substituting VLDPE for some of the LLDPE, the abrasion resistance of the film decreases. Figure 12 of Exhibit B provides data indicating that even between LLDPE polymers of differing densities, abrasion-resistance increases as density increases (i.e., more material is worn away per 1000 revolutions for the LLDPE having a 0.915 density than for a LLDPE having a density of 0.935).

Those of skill in the patch bag art would have recognized that abrasion resistance is an important factor in the performance of a patch on a patch bag. This is particularly true for a patch film which is adhered to the outside surface of the bag (note that Claim 14 recites the patch as being adhered to the outside surface of the bag). Should a bone-in meat product inside a patch bag move around inside the bag, a patch on the inside of the bag would be subject to abrasion from any bone in contact with the patch. However, a patch on the outside surface of the bag may have to endure abrasion due to contact with other packages, containers, equipment during processing, storage, transport, handling, display, and even during handling and transport by a consumer. Thus, one of skill in the art would recognize the risk of modifying the patch composition by substituting a lower density, less abrasion-resistant ethylene/alpha-olefin copolymer (e.g., VLDPE) for the higher density, more abrasion-resistant ethylene/alpha-olefin copolymer (e.g., LLDPE). Without experimentation, the expectation would be that the substitution of VLDPE for some of the LLDPE would result in lower patch performance, because abrasion-resistance would be expected to decrease as a result of the lower density of the VLDPE. Thus, one of skill in the patch bag art would not have been motivated to substitute VLDPE for some of the LLDPE in the patch film of FERGUSON '403, as to do so would lower the abrasion-resistance of the patch film.

Moreover, and in view of the abrasion-resistance argument above, Applicants again point to the evidence of unexpected results as set forth in Table VIII of Applicants' specification. Table VIII (see page 40 of Applicants' specification) shows that a patch bag having a patch film made from a blend of 75% VLDPE with 25% LLDPE exhibited a 25% failure rate in a Standard Rib Drop Test, compared with a 33% failure rate for a patch film made from 95% VLDPE, and a 37.5% failure rate for a patch film made from 95% LLDPE. Thus, it is apparent that a blend of VLDPE and LLDPE produces better patch performance (i.e., lower failure rate) compared with VLDPE alone or LLDPE alone. This is a synergistic result which is surprising over FERGUSON '403 alone or in view of FERGUSON et al '856, as the substitution of VLDPE for some of the LLDPE would have been expected to lower the abrasion resistance of the patch, resulting in higher failure rate in the Standard Rib Drop Test. That in fact the opposite occurred is evidence of yet another reason Applicants are entitled to a patent for their claimed invention.

IV. The Rejection of Claims 9 and 12 as Obvious over FERGUSON '403 in view of FERGUSON et al '856, further in view of WILHOIT

In Paragraph 8 of the 29 January Office Action, Claim 12 remains rejected under 35 USC 103(a) as unpatentable over FERGUSON '403 in view FERGUSON et al '856, further in view of U.S. Patent No. 5,283,128, to Wilhoit ("WILHOIT"). Paragraph 11 of the 29 January Office Action states that Applicants have failed to argue why WILHOIT cannot be used to teach a monolayer patch, and that WILHOIT teaches that blending provides the most desired properties of the resin components in a single film, and that the film may be a monolayer film.

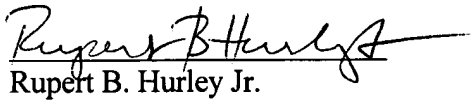
In response, Applicants contend that Claim 12 is patentable over FERGUSON '403 in view of FERGUSON et al '856 further in view of WILHOIT, for at least the same reasons that Claim 1 is

patentable over FERGUSON '403 in view of FERGUSON et al '856, i.e., as argued above. Again, lower temperature shrinkage is inadequate motivation to substitute VLDPE for some of the LLDPE of the patch film of FERGUSON '403, as substitution of the lower density VLDPE would have been expected to result in loss of abrasion-resistance, which is detrimental to patch performance. In addition, Applicants have unexpectedly discovered that a blend of LLDPE and VLDPE provides results superior to LLDPE alone in a Standard Rib Drop Test, as discussed above. Applicants acknowledge that WILHOIT discloses a monolayer film containing a blend of VLDPE, LLDPE, EVA, and ethylene/alpha-olefin plastomer having a density below about 0.90 g/cc.. However, one of ordinary skill in the art would not have been motivated to provide a blend of LLDPE and VLDPE in a patch film, in view of the surprising strength and toughness disclosed for the patch film of FERGUSON '403, and the lower abrasion-resistance of the lower density VLDPE.

Conclusion

Applicants respectfully request reconsideration of the patentability of the claims, in view of the amendment and remarks set forth above.

Respectfully Submitted,



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Appendix

A marked-up copy of the amendments to the claims is set forth below.

3. (Three Times Amended) The patch bag according to Claim 1, wherein the ethylene/alpha-olefin copolymer having a density greater than about 0.915 g/cm^3 is present in the blend in an amount of from about 5 to [95] 70 percent, based on the weight of the blend, and the heterogeneous ethylene/alpha-olefin copolymer having a density of less than about 0.915 g/cm^3 is present in the blend in an amount of from about 30 to 95 percent, based on the weight of the blend. [, and wherein the ethylene/alpha-olefin copolymer having a density greater than about 0.915 g/cm^3 and the heterogeneous ethylene/alpha-olefin copolymer having a density of less than about 0.915 g/cm^3 together make up at least 70 percent of the total weight of the layer.]